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Space Administration

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California Institute of Technology
Pasadena, California

V6 Planning …
take ~~1~~ 3

Revisiting our Approach, Schedule, Process and Goals

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AIRS Science Processing

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Approach
Putting *everything in its proper time and place*

- **Provide sufficient time to develop a quality V6 product exhibiting significant improvement over V5**

  Time allocated for:

  - Preliminary investigations, prototyping and demonstration tests

  

  - Development time – greater than 1 year for development and test
  - Integration into AIRS PGE at JPL
  - Testing – six months allocated for comprehensive tests

- **Mid-course corrections, status checks at least two more Science Team meetings (Fall 2007 *[this meeting]* and Spring 2008)**

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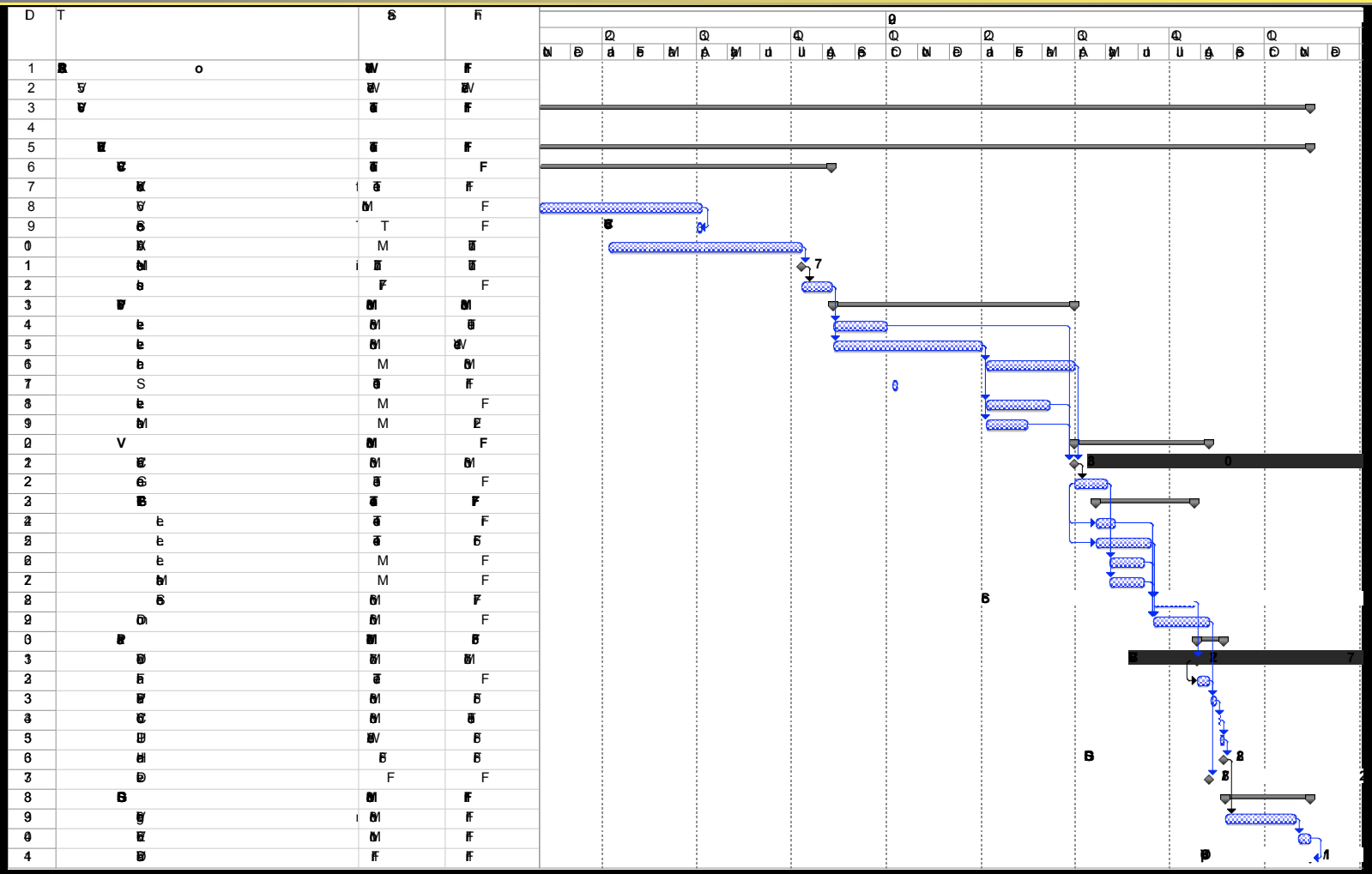
V6 Schedule



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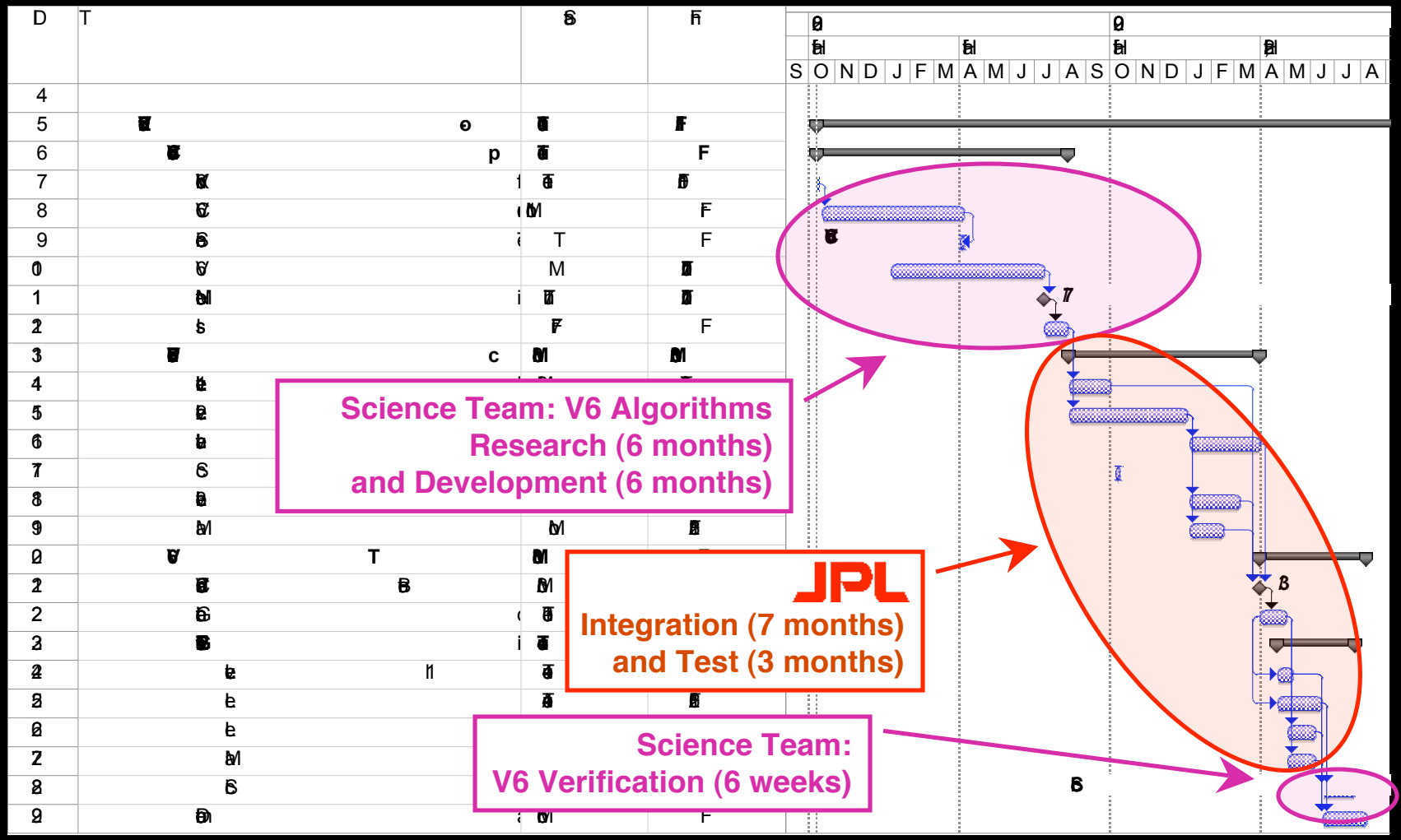
V6 Schedule



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V6 Milestones

- **Schedule includes sufficient time for:**
  - Preliminary investigations / prototyping – six months
  - Total development time – greater than 1 year
  - Testing – three months

V6 Kickoff - Science Team MTG	October 2007
Concept Development and Prototyping ends	April 2008
V6 Content Determination - Science Team MTG	April 2008 ← We are here
V6 Algorithm Development ends	July 2008 ← Can we do it?
V6 Status - closure issues - Science Team MTG	July 2008
V6 Code Integration at JPL (CCB controlled)	August 2008 - March 2009
V6 Candidate Build	March 2009
V6 Integration and Test	April - June 2009
Science Team Verification of V6 Products	June - July 2009
V6 Delivery to GES DISC	August 2009
V6 Operational	November 2009

Process

- **Concept Phase**
  - Science Team is encouraged to develop new concepts approaches that will result in significant improvements to AIRS products
  - CCB will move slowly – approving minimal changes to code base
  - Control changes to mitigate externalities
- **Development Phase**
  - Prior to delivery, developer must demonstrate functionality and effectiveness in working prototype
  - Science Team and AIRS Project will concur on significant changes
  - Developer must Demonstrate that code produces same (and intended) results once integrated into a working prototype of the AIRS PGE at JPL in the AIRS development environment
  - Code does not cause adverse downstream effects
- **Integration and Test Phase**
  - Tightly controlled code
  - CCB will not entertain new concepts, good ideas, well intentioned improvements, …

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L1 Improvement Priorities

- **Level 1B Priorities**
  - Improve Spectral Calibration
  - Maintain Channel Properties
  - Allow Dynamic Noise Estimates
- **Level 1C – *This is a New Product!***
  - Resampled L1B product to constant spectral grid, etc.
- **Operations Priorities**
  - Instrument Maintenance and Calibration
  - Trending Performance and Icing

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L2 Improvement Priorities

- **Improve Boundary Layer Sensitivity**
  - Incorporate accurate Emissivity Product to support weather forecasting
  - Improve Boundary Layer Sensitivity over land and ice of all products
- **Improve Yield in Critical Areas: Polar, proximity to storms, above clouds**
- **Initialization State and Error Estimation**
  - Evaluate alternate error propagation to improve basis of errors
- **RTA Improvement: Reduces Biases in water and gases**
- **Trace Gas Retrieval Improvement: CO, CH4, O3**
- **Improve OLR Retrieval**
- **Cloud and Dust Retrievals: Demonstrate IR value for cloud/dust products – *Potential new products!***
- **Mid Tropospheric CO2 – *This is a new product!***

L3 Improvement Priorities

- **L3 Priorities**
  - Incorporate new Products
  - Reduce Sampling Bias Effects
  - Alternate Formats for Users

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Validation Priorities

- **Comprehensive Validation of:**
  - Water Vapor
  - Clouds
  - Aerosols
  - CO, CO_2, CH_4, O_3
- **Validate Sites:**
  - Polar Regions
  - Boundary Layer
  - Aircraft Campaigns

These activities should be well under way now

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Most Effective use of AIRS Lenticular Card